Succeeding with interactive research

How to manage research with and about society

Krogh, Andreas Hagedorn; Nielsen, Morten Velsing

Published in:
Research for All

DOI:
10.18546/RFA.01.2.11

Publication date:
2017

Document Version
Publisher's PDF, also known as Version of record

Citation for published version (APA):
Krogh, A. H., & Nielsen, M. V. (2017). Succeeding with interactive research: How to manage research with and about society. *Research for All*, *1*(2), 351-364. [14]. https://doi.org/10.18546/RFA.01.2.11

RESEARCH FOR ALL

Hagedorn Krogh, A. and Velsing Nielsen, M. (2017) 'Succeeding with interactive research: How to manage research with and about society'. *Research for All*, 1 (2): 351–64. DOI https://doi.org/10.18546/RFA.01.2.11

Succeeding with interactive research: How to manage research with and about society

Andreas Hagedorn Krogh – *Roskilde University, Denmark*
Morten Velsing Nielsen* – *University College Absalon, Denmark*

Abstract

Increasingly, social science research is carried out in collaboration with partners outside universities, yet research methodology is lacking on how to manoeuvre in a terrain where multiple actors set expectations for research. This article conceptualizes interactive research as research with and about society, and provides a set of systematic reflections on how to manage opposing pressures, tensions and dilemmas in interactive research projects. We formulate and address three major interactive research management tasks: ensuring continual commitment from external stakeholders, maintaining the capacity for critique and ensuring that scientific standards are met. Based on our own experience and theories of interactive governance, network management and collaborative leadership, as well as on existing methodological literature, we provide guidance and suggest concrete tools and methods for performing the tasks in order to avoid the pitfalls and harvest the gains of interactive research.

Keywords: interactive research; engaged scholarship; research collaboration; research methodology; network management

Key messages

- Researchers are advised to set up working groups, advisory boards and other permanent structures of interaction that allow for periodical discussions of the research with external partners during the research process.
- Researchers are advised to see external partners as knowledgeable, but situated, agents and to apply methods that secure the inclusion of a variety of perspectives in the research process.
- Researchers are advised to establish a clear division of roles and responsibilities among research participants, where external partners contribute with inputs, comments and feedback that serve to qualify research decisions, which are taken by the researchers in accordance with scientific standards.

Introduction

In recent years, university researchers in Europe and North America have experienced increasing external and internal pressures to make research societally relevant through partnerships and increased collaboration with public and private partners (Nielsen and Svensson, 2006; Hessels and van Lente, 2008). The idea that research should be

*Corresponding author – email: movn@ucsj.dk

'with and for society' has risen to the top of political research agendas at national and transnational levels (Owen *et al.*, 2012; Nielsen, 2016). For instance, the EU has developed a list of grand societal challenges that research should contribute to addressing (European Commission, 2012). The political ambitions are backed by new funding requirements and tighter budget controls that increase economic incentives for universities and individual researchers to initiate and expand collaboration with external partners as co-financers of research (European Commission, 2009). Finally, research ideals are undergoing subtle change and the merits of more interactive forms of research are gaining attention and recognition in more and more academic subfields within the social sciences (Bogason, 2006; Bergold and Thomas, 2012).

While these developments provide new opportunities, they also involve new challenges for the quality, robustness and independence of research (Caswill and Shove, 2000). Critics argue that the focus on research for and with society leaves social sciences in the hands of resourceful public and private actors with particular interests that have nothing to do with good science and everything to do with power and profits (for example, Slaughter and Leslie, 1997; Ziman, 2000). They fear that academic standards for research are undermined when the applicability of research becomes a key measure of success, and that scientific knowledge will no longer be any different from the knowledge of competent practitioners (Kieser and Leiner, 2009: 528). They alert us to the possibility that the push for more co-financed and co-produced research will lead to biased advocacy research with low degrees of reliability.

Having carried out several research projects in close collaboration with external partners, we recognize these significant risks and challenges for interactive research. However, we have also found that research partnerships and collaborations with external stakeholders hold the potential for improving the scientific quality of our research and enhancing its critical capacity. Through our practical experience, we have come to see that interaction can contribute towards these ends if it is organized, structured and facilitated in reflexive ways.

Methodological literatures on action research (Lewin, 1946), engaged scholarship (Van de Ven, 2007), and participatory research (Bergold and Thomas, 2012) offer valuable insights into how to conduct research in close collaboration with diverse groups of actors. However, there is a need for a systematic set of reflections on how to manage the opposing pressures, tensions and dilemmas arising in research projects carried out in cooperation with co-financing parties and other resourceful actors. In this article, we will provide guidance for interactive researchers on how to keep external partners interested in contributing valuable resources to the research process, while maintaining the capacity for critique and ensuring that scientific standards are met.

The article proceeds in the following way. First, we develop a concept of interactive research that focuses on the contribution of partnerships between researchers and external stakeholders for the production of scientific knowledge. Second, we consider how to initiate, facilitate and nurture interaction throughout the research process in ways that will achieve the goals of interactive research. In doing so, we look to theories of interactive governance, network management and collaborative leadership for insights into the facilitation of inter-organizational relations, and reformulate the critiques of interactive research into two major management tasks that we suggest solving by developing new skill sets and applying new methods. The article concludes by recapping the argument and summing up our interactive research advice.

Doing research with and about society

A first step on the way to successfully managing often highly complex interactive research processes is to understand the various goals, process requirements and role divisions involved in the chosen type of research. Knowing the 'what' and the 'how' of a research process is essential for applying the appropriate management tools.

Throughout the past couple of decades, numerous academics have attempted to capture the shifting ideals, conditions and processes of knowledge production, using concepts such as triple helix (Etzkowitz and Leydesdorff, 1995), mode 2 (Nowotny *et al.*, 2001) and post-academic science (Ziman, 2000). These concepts tend to be accompanied by grand narratives of moving from one (traditional) research paradigm to another (interactive) research paradigm. Empirically informed accounts of this kind describe well the changing conditions for research and the difference between past ideals and new developments. As such, they provide a rich foundation for discussing the general characteristics and desirability of the megatrends. However, in practice many forms of research practices and ideals coexist. Macro-level discussions and accounts should therefore be supplemented by meso-level frameworks and examinations of the nuances, tensions and dilemmas that arise when various modes of research exist alongside each other – and sometimes even do so within the same research projects.

In this section, we develop a conceptual framework that captures four types of research based on a purpose dimension (research for or about society) and a process dimension (research with or without society). It is intended to help us improve our understanding of conducting interactive research and what aspects we should consider when trying to achieve the double aim of developing projects benefiting all participants and maintaining academic standards. The aim is not to argue for the superiority of interactive research over other types of research; on the contrary, we want to stress that they each have their qualities and merits. In the remainder of the article, we will discuss the blurred lines between the four types of research, paying special attention to management of research with and about society. Table 1 provides an overview of the four types of research that we will discuss in the following four subsections.

Table 1: Four types of research

	About society	For society
Without society	Conventional research	Applied research
With society	Interactive research	Action research

Conventional research: About and without society

Conventional social science research seeks to produce scientific knowledge through the systematic development of empirical testable hypotheses and abstract theoretical generalizations (Fotel, 2010). The research questions and results are generated with and for the scientific community and published in peer-reviewed journals, edited volumes and books by university presses and other scientific publishers.

Methodologically, randomized sampling and controlled experiments are preferred as the ultimate methods for creating objective, value-free and reproducible research. Empirically, this research may rely on quantitative data, document studies, structured interviews, non-participatory observations and other methods that clearly

separate the researcher and the designed research questions from the informants and other data sources. The role division between researcher and researched is therefore one of observer and object. The aim is to produce a controlled research environment as a way to ensure the validity and reliability of the research. As such, this approach has affinities with the natural sciences.

Action research: For and with society

As early as the 1940s, Lewin (1946) introduced action research as an explicit attempt to make research more societally relevant and responsible. Action research aims to create positive change in society by empowering relevant groups of actors through interventions such as workshops and collaborative planning of action. The planned interventions typically target marginalized and disempowered groups in society, with the intent of providing them with the knowledge, the strengths and the tools to change their own conditions. Since such interventions presuppose a lack of organizational, collective and/or personal competencies and capital on the part of the participants, it is typically the researcher who identifies the needs, poses the research questions and designs the interventions. The relation between the researcher and the participants becomes one of facilitator and prospective agents of change.

While action research in its traditional form is still alive and well, new forms of social science research that build on earlier ideals of societal relevance and the role of research in developing society have gained attention in the past couple of decades (Pettigrew, 2005). Researchers are now increasingly encouraged to leave the ivory tower and become catalysts for societal innovation (Smoliner *et al.*, 2001). Aware of the fact that the term 'action research' is historically loaded and embedded in specific research traditions and practices, we still choose the term to label this and all other kinds of research explicitly carried out for and with society. We do so in order to keep the distinction clear between research preoccupied with *action* as a research goal and research concerned with *interaction* as a research means. In our definition, action research makes use of participatory processes to produce action whereas interactive research relies on interactive processes to improve scientific outputs (as we will see below).

Applied research: For and without society

As universities become more and more dependent on funding from private sources and external stakeholders, researchers are increasingly inclined to produce applicable knowledge requested by resourceful actors and funds (Slaughter and Leslie, 1997). Research using conventional social science methods to produce solutions to societal problems, we call applied research (see Bickman and Rog, 2009). In this type of research, external agents pose the questions and/or directly request the research, and researchers answer them. The role division between researcher and researched is hence one of consultant and purchaser/client/user. The results of applied research are typically published in reports that are either made publically available or kept in-house by the funding agencies or organizations.

Since the research is conducted with a clear aim of translating the results into practice, the researcher will typically be prompted to come up with policy advice or other forms of explicit recommendation for key actors, based on the research results. Compared to conventional research, the gold standards of research move away from ideas of objectivity and truth towards questions of whether the results are feasible to apply, relevant in the context, and recognized by the actors involved (Bogason, 2006:

20–2). Compared to action research, the change process is not directly facilitated by the researcher; rather, the decisions on whether or not to implement the recommendations are left with the external actors.

Interactive research: About and with society

In accordance with the conceptual framework, we define interactive research as research carried out in partnership with actors outside universities with the intent of advancing scientific output. Interactive research has the same goals as conventional research, but seeks to achieve them by different means and methods. In interactive research, researchers define the aim of the study and evaluate the results, while involving practitioners in the design of the study, the production of data and the continuous discussion of results.

With the aim of publishing research results in peer-reviewed journals and other outlets for reaching relevant scientific communities, the researcher is responsible for formulating scientifically relevant research questions and ensuring the reliability of the methods used when answering them. From the perspective of interactive research, the focus on the production of knowledge deemed relevant by scientific communities does not lead to the conclusion that external actors should be excluded from the process and only play the role of passive objects of research. The argument for interactive research is that increased interaction will heighten the quality of scientific knowledge production (Boyer, 1990). A closer relationship between research and practice can strengthen problem identification, provide access to the field of study, and qualify the interpretation of data through the inclusion of diverse forms of knowledge and expertise (Van de Ven, 2007). Although often time consuming, second order interaction with external actors can assist the researcher in developing and validating hypotheses, gathering data, achieving more concise interpretation of the data, and understanding the scope and limits of the generalizability of results (Fotel, 2010). Practitioners are hence seen as knowledgeable agents, or even experts, that the researcher can and should involve in discussions about research in order to improve the scientific output.

Since the various types of research involve different aims, process requirements and role divisions, researchers must consider what they do and how they do it in order to manage the process in ways that will achieve the desired outcomes. Considering the first three types of research, they must choose to enter the process as observers, facilitators, or consultants and approach external actors as research objects, prospective agents of change or purchasers/clients/users of knowledge. In the fourth type of research – what we call interactive research – they enter the process as scientists who invite other knowledgeable agents to discuss their research.

Multi-actor interactive research processes can be hard to manage, and researchers risk finding themselves caught between aims and expectations that are difficult to reconcile. When several actors with different agendas and motivations enter the research process as knowledgeable and resourceful actors, it can be a difficult task to maintain the scientific focus, establish the desired role divisions and nurture the much-needed relations with external partners in productive ways. In the remainder of the article, we delve deeper into the complex task of conducting interactive research with and about society.

Managing interactive research: New roles, tasks and competencies

In order to stimulate reflections and provide guidance to researchers and research institutions who consider embarking on interactive research projects, we will now consider three major research management tasks that require new forms of awareness, skill sets and organizational capacities in and around the research process. The tasks can be formulated in three questions that must be answered to carry out interactive research projects successfully: (1) How do we ensure the desired buy-in from external stakeholders? (2) How do we ensure the capacity for critique? and (3) How do we ensure that scientific standards are met in interactive research processes?

Scholars of interactive governance (Torfing *et al.*, 2012), network management (Agranoff and McGuire, 2001; Koppenjan and Klijn, 2004; Keast *et al.*, 2013) and collaborative leadership (Crosby and Bryson, 2005; Huxham and Vangen, 2005; Vangen and Huxham, 2012) have long been concerned with questions of how to manage interactive relations between actors with various goals, interests, values, perspectives and forms of expertise. In the next sections, we explicitly and implicitly build on these well-developed bodies of literature to understand the conditions and suggest specific tools and methods for managing relations between researchers and external stakeholders in ways that will help achieve the desired outcomes of interactive research processes. The aim is to provide guidance for interactive researchers on how to involve external partners in interactive research processes while maintaining the capacity for critique and ensuring that scientific standards are met.

Ensuring buy-in from external stakeholders

In order to reap the fruits of interactive research and mobilize external resources, relevant public and private actors must be engaged and 'strategically activated' (see Scharpf, 1978; Agranoff and McGuire, 2001: 298–9). At all stages they must be able to ascribe meaning to the research project and justify their involvement in terms of its contribution to their own aims or remit, so that they stay committed and willing to invest time and resources in the project (Huxham, 1996). Even though the main interest of interactive researchers is to produce scientific knowledge *about* (rather than *for*) society, they must still find ways of obtaining buy-in from relevant partners outside of their scientific communities.

Glerup and Horst (2014) identify three ways to ensure that research tackles shared problems or relates to common interests among several groups. First, external actors can use funding requirements to define the questions that research should address and the type of knowledge it should produce. Second, the researchers themselves can try to identify how their topic is relevant to external actors. Third, researchers and external actors can team up to define questions and discuss results throughout the research process.

Keeping our typology of research in mind, the first way of ensuring external buy-in may drag research projects in the direction of applied research, where external demands are privileged over scientific relevance. The second way of ensuring external relevance may be successful, especially for experienced researchers with extensive knowledge of the positions and current agendas of relevant public and private actors in the field. However, if researchers have the time and the appropriate management tools and competencies to engage external actors in productive interactions, the third method

of ensuring mutual interest in the research throughout the process is the preferred solution for several reasons.

Setting up working groups and advisory boards involving both researchers and practitioners has the potential for strengthening the professional relations between the researcher and the external partners. It provides platforms for second order discussions of the research. It enables the researcher to benefit from the qualifying and catalysing effects of bringing diverse forms of expertise together. It also serves the more immediate task of keeping the partners committed to the process.

Initial partnership agreements increase the chances that both researchers and external stakeholders find the research sufficiently interesting. However, ensuring commitment is not only a preparatory task but a constant consideration, since the priorities, interests and agendas of organizations change over time as new acute problems emerge, new public policies are adopted and other actors make new strategic decisions (see Koppenjan and Klijn, 2004; Huxham and Vangen, 2005: 220–2). As a practitioner involved in interactive research describes the process, 'Each stakeholder … represents different resources, expectations and types of stakes … all of which should be mediated successfully throughout the project process' (Nielsen, 2014: 81). By establishing advisory boards and other permanent structures of interaction, the researcher is better able to detect and address such changing interests.

Part of the continual facilitative sense-making task consists of overcoming barriers to communication and knowledge transfer between science and practice. Researchers must engage in translation and the task of developing a common language that builds bridges and allows for fruitful interaction between what are often seen as distinct worlds (see Klein, 1996). If the researcher is unable to communicate and translate his or her ideas, the research project may not be deemed important by the practitioners involved in interactive research (Vehviläinen, 2006: 327).

Finding common ground and defining common objectives cannot, however, be reduced to a matter of communication. Differences in working conditions and goals complicate the task of getting external partners on board and keeping them involved in often years-long research processes because 'different criteria of relevance and rigor apply to knowledge for science and practice because their purpose, processes, and contexts are different' (Van de Ven, 2007: 236). Often there is a clash between the long-term objectives of academia and the short-term needs of practitioners (Vehviläinen, 2006: 325). Furthermore, what is rewarded in academia, such as peer-reviewed articles, might have little importance in other settings (Nyden *et al.*, 2011: 7).

Continually sharing and discussing analyses and results with the participating agencies, businesses and organizations is a way to satisfy the short-term needs of external partners in longer research processes, and thereby limit the need to produce separate deliverables for this audience, such as applied research reports. Interactive processes will always remain a 'mixed-motive' situation, with both shared and unshared objectives, and not all participants need to ascribe the same meaning to the same activities (Crosby and Bryson, 2005: 18; Vangen and Huxham, 2012). While researchers may engage in interactive research to improve their research with the aim of publicizing it in peer-reviewed journals, external partners may do the same in order to stay updated on the latest research in their field and to get a chance to comment on the results before they are publicized. We maintain that the interests of both researchers and external partners must be ensured in order to realize the potentials of interactive research as defined above.

Ensuring the capacity for critique

Dependency on the resources of other actors is what binds networks and collaborations together; it is also what makes for potential power imbalances among participants (Torfing *et al.*, 2012). In interactive research, external actors possess and provide much-needed resources such as funding, access (that is, legitimacy and network) and expertise. Universities' and researchers' increasing dependency on these resources is what makes some scholars concerned that current developments will compromise independent research and lead to instrumentalized knowledge production in the interest of powerful actors (see Ziman, 2000).

First, resource dependency may limit the ability of researchers to carry out research that has no direct utility to resourceful actors, including research that directly criticizes powerful actors and established power structures of society (Slaughter and Leslie, 1997). Moreover, it challenges researchers to balance a close involvement with a critical distance (Levin, 2012). Compared to the more distanced researcher–researched relationship of conventional research (Bogason, 2006: 22), the lines between the roles of critical observer and consultant or even colleague can become blurred (see Coghlan and Brannick, 2014: 138). In extreme cases, the resourceful external actors may influence the research questions, processes and results in ways that bias the results. Finally, the already powerful actors with the money, time and other resources to invest in research projects may utilize the legitimacy attached to objective research to further strengthen their own positions.

Using the framework developed above, we may translate the critique of current developments into two research managements tasks to which interactive researchers must attend: (1) to maintain the right and responsibility of university researchers to carry out research that meets conventional scientific standards under conditions that favour applied research and (2) to conduct interactive research without slipping into action research with and for the powerful. We will deal with the second task first.

Researchers are advised to do three things to handle situations where they experience direct pressure to change their analysis in order to produce a specific result or to portray certain actors in more or less favourable ways. First, they must maintain their integrity and uphold the scientific ethos by refusing to proceed with research processes in such cases. Second, they must ensure their formal rights to the scientific results in order to retain their legal privileges in the event of an external partner misusing the research results, or the name of the researcher or the research institution. Third, they should make either direct or indirect use of their own privileged position as representatives of a university or other respected knowledge institution in society, which grants them a public voice and high degrees of legitimacy.

The prospects of being publicly critiqued by esteemed researchers will deter most organizations and businesses from attempting to pressure the research team. In fact, an agreement for fair treatment, mutual respect for each other's work, and full or partial anonymization of scientifically published analyses is often a prerequisite for partners to enter into an interactive research project, which also reflects the real power of the researcher. Such agreements pose no threat to the independence of the researcher and should of course be adhered to. If external partners break the agreement the researcher has a right and responsibility to halt the research process and, if necessary, also to use his or her public voice to make others aware of the issues related to the research that has already been carried out.

External partners may also influence and utilize research results in more subtle and perhaps even unintended ways. If the researcher simply reproduces the perspectives

of specific actors without reflecting on their situatedness and boundedness and/or without contrasting them to other perspectives (whether those perspectives are theoretically derived or expressed by other actors in the field), then the research is likely to be biased in favour of actors with privileged access to the researcher and research process. Interactive researchers must therefore see external partners as knowledgeable but situated agents, and avoid playing a part in transforming their unmediated narratives into objective truths.

When researchers live up to these ideals and take the necessary precautionary measures, we believe that interactive research actually holds the potential for increasing the ability of researchers to formulate critical perspectives. First, partners are often interested in knowing and understanding what they are doing wrong in order to improve their own practice; this might even be the very reason for them to enter into interactive research. In that sense, the assumption that external partners are only interested in research that portrays them in a positive light and grants legitimacy to their current practices is highly questionable. When we tell external partners that we see them as experts in their fields, we are often met with a sceptical response along the lines of: 'we don't know what we are doing – we actually hope that you will tell us what we are doing wrong and what to do differently!'

Second, interacting with a number of external actors can be a way to avoid biases in the research process (Bogason, 2006: 24). Triangulating perspectives from various actors will assist the researcher in mapping the positions in the field, figuring out the main points of disagreement and contestation, and understanding the particularities of single-actor perspectives. Facilitated discussions of analyses and findings among a broad circle of external stakeholders will bring out the differences and provide the researcher with valuable information on the power (in)balances between the actors involved. As such, interacting with practitioners can support the researcher in formulating critiques of hegemonic perspectives and highlight power struggles in the field.

Finally, we must also recognize that some of the fiercest critics of systems, organizations and practices are to be found among insiders. All in all, the concerns about a loss of critical capacity in interactive research can be addressed by applying appropriate methods for exploring, explaining and discussing various perspectives and practices already existing in the social, cultural and political field of interest.

A promising interactive research method is the Delphi study method (Day and Bobeva, 2005; Donohoe and Needham, 2009; see Box 1). The Delphi study technique is a resource-efficient way to obtain a large number of perspectives on an issue, mobilize the critical potential of external actors and potentially challenge established truths. Moreover, it also aids researchers in ensuring the relevance of research for external stakeholders whose participation is needed (see the management task considered above: conducting interactive research without slipping into action research with and for the powerful). Finally, it grants the researcher a privileged position in deciding what leads to pursue further, while respecting and mobilizing the expertise of external stakeholders (see the management task considered below: maintaining the right and responsibility of university researchers to carry out research that meets conventional scientific standards under conditions that favour applied research). As a method for conjuring up perspectives of strategically selected experts, the Delphi study method is a relevant supplement to other methods for generating and discussing hypotheses in interactive research projects.

Box 1: The Delphi study method

A Delphi study is 'a structured group communication method for soliciting expert opinion about complex problems or novel ideas, through the use of a series of questionnaires and controlled feedback' (Day and Bobeva, 2005: 103).

An expert panel of practitioners and researchers is strategically selected to obtain a large pool of knowledge and capture various perspectives on a given problem of interest. In a first round of questions and answers, the panelists will answer one to ten open questions concerning the problem at hand. The researcher then inductively codes the answers, summarizing them in a number of concise statements that are sent back to the panelists for further comments. The process can be repeated, and may involve several rounds of feedback until consensus has been reached and/or the most pertinent points of disagreement have been identified.

Granting the respondents anonymity in relation to each other as well as the researcher is advisable as it allows for more critical perspectives to surface.

Ensuring that scientific standards are met

As discussed, interactive researchers can be challenged on their independence, scientific ethos and ability to co-produce research that meets conventional scientific standards. If classical scientific standards of objectivity and truth are replaced by new standards of applicability and relevance to external partners (Bogason, 2006: 20–2), then the production of scientific knowledge is endangered. As Kieser and Leiner put it:

> If science loses its distance to its research objects, for example by collaborating with practitioners or by trying to produce directly applicable practical solutions, it would no longer be able to generate knowledge that is different in principle from the knowledge of competent practitioners.
>
> (Kieser and Leiner, 2009: 528)

The response to these concerns can be to enter into a struggle for the institutional rights, responsibilities and possibilities of researchers to conduct conventional research as defined above. However, more conventional research is not the only answer to the problem. If appropriately managed, interactive research holds great potential for addressing fundamental scientific questions and producing scientific advances with the required scientific rigour, as argued in the subsection on interactive research above.

In order for this to happen, it is essential to establish a clear division of roles between scientists and the other knowledgeable, but situated, co-producers of interactive research. In interactive research, the researcher is responsible for formulating scientifically relevant research questions, applying appropriate theories and methods, and ensuring the reliability and validity of the results. The external partners contribute with inputs, comments and feedback that serve to qualify the way these research tasks are carried out.

As such, interactive research inverts the researcher–practitioner relation of applied research as defined above. In applied research, researchers advise practitioners on what to do and practitioners decide which recommendations to follow, as they are also responsible for implementing the proposed adjustments and changes. In interactive research, knowledgeable practitioners advise researchers, and researchers decide how to use the advice to improve their research in accordance with the scientific standards in their field of research. In research projects that aim to contribute to both scientific

and practical advances, the participants should be aware of their respective roles in ensuring that both objectives are reached.

While interactive researchers recognize various forms of expertise as both valuable in their own right and potentially useful for advancing scientific knowledge, they should always be aware of the distinct characteristics of what is recognized as scientific knowledge and their own role in producing such knowledge. In brief, they should keep in mind: (1) that the production of scientifically reliable and valid knowledge requires them to meet the standards defined by the scientific community in their field; (2) that these standards are typically different from the ones applied when practitioners develop and apply knowledge; and (3) that they as researchers are the ones responsible for ensuring that the research meets these standards. The various orientations, roles and responsibilities should be discussed and settled from the outset and adapted throughout the interactive research process.

The inclusion of multiple actors makes the research process more complex, unpredictable and ambiguous than is the case for convention research where the researcher maintains greater control over the research design and process (Bogason, 2006: 23). The interactive elements tend to increase the need for constant adaptation and rethinking of the project, which challenges the consistency of the research questions and therefore potentially the reliability of the research itself (Fotel, 2010). If researchers change the research questions halfway through the research project, perhaps in the light of new knowledge of what is relevant in the researched context, they might need to prolong the research process in order to apply new methods that systematically review the newly emerged questions of interest. Since prolonging the process is often not an option, they may also pursue a strategy of formulating propositions in need of further development and testing as their main research output. A more desirable option, however, is to involve external stakeholders in the earliest phases of the research process, in order to mobilize their insights before formulating hypotheses for further testing and development, for example through the use of the Delphi study technique.

Applying a sequential mixed-method design and/or dividing the research into separate working packages, carried out in sequence or in parallel, can also be a way for researchers to juggle various aims, interests and forms of research within the same research project. Perhaps researchers will start the process with a pilot study, followed by discussions with external partners about the initial findings and further development of the research project; then carry out larger scale conventional research involving reviewing previous studies and available data; go back to discuss the analyses with practitioners in appropriate forums; plan an intervention with and for the external partners while writing up one or more scientific articles; and finally provide policy recommendations while the journal articles are in review.

Conclusion

In this article we have conceptualized interactive research as research with and about society, and provided some reflections on how to manage key tensions and dilemmas in interactive research projects. We have addressed the three major research-management tasks of ensuring continual commitment from external stakeholders, maintaining the capacity for critique and ensuring that scientific standards are met.

Based on our own experience and theories of interactive governance, network management and collaborative leadership, as well as existing methodological literature, we have advised interactive researchers to do three things. First, to set

up working groups, advisory boards and other permanent structures of interaction that allow for periodical discussions of the research with external partners during the research process. Second, to see external partners as knowledgeable, but situated, agents, and to apply methods that secure the inclusion of a variety of perspectives in the research process. Third, to establish a clear division of roles and responsibilities among research participants, where external partners contribute with inputs, comments and feedback that serve to qualify research decisions, which are taken by the researchers in accordance with scientific standards.

Doing so will assist the researcher in achieving a number of intermediate goals: (1) identifying changing interests and agendas of external partners; (2) developing a mutual understanding of the direction of the research; (3) satisfying the short-term needs for results in longer research processes; (4) mapping the positions in the field; (5) figuring out the main points of disagreement and contestation; (6) understanding the particularities of single-actor perspectives; and (7) ensuring that scientific standards of objectivity and truth are not replaced by standards of applicability and relevance to external partners.

Developing new professional competencies and appropriate frameworks for inter-organizational partnerships is essential for researchers and research institutions venturing into the world of interactive research. The demands, tasks and challenges of interactive research require researchers to take on perhaps unaccustomed roles in order to maintain their integrity as producers of independent and high-quality scientific knowledge with and about society. In the light of new developments, universities should consider how to ensure institutional back-up for interactive research, for example by crafting formalized agreements between the university and external organizations and ensuring competent administrative back-up for handling multi-party processes. Leaving it to the researcher alone to juggle the complex relations is not advisable, perhaps especially when it comes to early career academics. Keeping external partners interested in contributing valuable resources to the research process while maintaining the capacity for critique and ensuring that scientific standards are met is an institutional responsibility. If appropriately managed, the array of new partnerships emerging from the new developments in academia can be turned into a major asset for social science research carried out with and about society.

Notes on the contributors

Andreas Hagedorn Krogh is a PhD fellow at the Department of Social Sciences and Business, Roskilde University. His research interests cover collaborative innovation and cross-sector collaboration in the prevention of crime. He studies these topics through the perspective of network governance, examining how collaborative processes are steered to reduce crime.

Morten Velsing Nielsen is adjunct at University College Absalon. His research interests concern co-creation in public sector projects and the engagement of stakeholders in the governance of research and innovation. In his PhD, he examined recent calls for making research and innovation more responsible.

References

Agranoff, R. and McGuire, M. (2001) 'Big questions in public network management research'. *Journal of Public Administration Research and Theory*, 11 (3), 295–326.

Bergold, J. and Thomas, S. (2012) 'Participatory research methods: A methodological approach in motion'. *Historical Social Research*, 37 (4), 191–222.

Bickman, L. and Rog, D.J. (eds) (2009) *The SAGE Handbook of Applied Social Research Methods*. 2nd ed. Thousand Oaks, CA: SAGE Publications.

Bogason, P. (2006) *New Pragmatism and Interactive Research*. Presented at the PAT-Net, Olympia, Washington.

Boyer, E.L. (1990) *Scholarship Reconsidered: Priorities of the professoriate*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

Caswill, C. and Shove, E. (2000) 'Introducing interactive social science'. *Science and Public Policy*, 27 (3), 154–7.

Coghlan, D. and Brannick, T. (2014) *Doing Action Research in Your Own Organization*. 4th ed. London: SAGE Publications.

Crosby, B.C. and Bryson, J.M. (2005) *Leadership for the Common Good: Tackling public problems in a shared-power world*. 2nd ed. San Francisco: Jossey-Bass.

Day, J. and Bobeva, M. (2005) 'A generic toolkit for the successful management of Delphi studies'. *Electronic Journal of Business Research Methods*, 3 (2), 103–16.

Donohoe, H.M. and Needham, R.D. (2009) 'Moving best practice forward: Delphi characteristics, advantages, potential problems, and solutions'. *International Journal of Tourism Research*, 11 (5), 415–37.

Etzkowitz, H. and Leydesdorff, L. (1995) 'The triple helix: University–industry–government relations: A laboratory for knowledge based economic development'. *EASST Review*, 14 (1), 14–19.

European Commission (2009) *Diversified Funding Streams for University-Based Research: Impact of external project-based research funding on financial management in universities*. Luxembourg: Office for Official Publications of the European Communities. Online. http://ec.europa.eu/invest-in-research/pdf/download_en/external_funding_final_report.pdf (accessed 25 March 2017).

European Commission (2012) *Responsible Research and Innovation: Europe's ability to respond to societal challenges*. Luxembourg: Publications Office of the European Union. Online. http://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf (accessed 25 March 2017).

Fotel, T. (2010) *Interactive and Pragmatic Methodologies in Public Management: A case of regional governance networks*. Paper presented at the IRSPM (International Research Society for Public Management) Annual Conference, Berne, Switzerland, 7–9 April. Online. http://forskning.ruc.dk/site/files/57418452/IRSPM_InteractiveMethods_FotelDK.pdf (accessed 25 March 2017).

Glerup, C. and Horst, M. (2014) 'Mapping "social responsibility" in science'. *Journal of Responsible Innovation*, 1 (1), 31–50.

Hessels, L.K. and van Lente, H. (2008) 'Re-thinking new knowledge production: A literature review and a research agenda'. *Research Policy*, 37 (4), 740–60.

Huxham, C. (1996) 'Collaboration and collaborative advantage'. In Huxham, C. (ed.) *Creating Collaborative Advantage*. London: SAGE Publications, 1–19.

Huxham, C. and Vangen, S. (2005) *Managing to Collaborate: The theory and practice of collaborative advantage*. London: Routledge.

Keast, R., Mandell, M.P. and Agranoff, R. (2013) *Network Theory in the Public Sector: Building new theoretical frameworks*. London: Routledge.

Kieser, A. and Leiner, L. (2009) 'Why the rigour–relevance gap in management research is unbridgeable'. *Journal of Management Studies*, 46 (3), 516–33.

Klein, J.T. (1996) *Crossing Boundaries: Knowledge, disciplinarities, and interdisciplinarities*. Charlottesville: University Press of Virginia.

Koppenjan, J. and Klijn, E.-H. (2004) *Managing Uncertainties in Networks*. London: Routledge.

Levin, M. (2012) 'Academic integrity in action research'. *Action Research*, 10 (2), 133–49.

Lewin, K. (1946) 'Action research and minority problems'. *Journal of Social Issues*, 2 (4), 34–46.

Nielsen, K.A. and Svensson, L. (eds) (2006) *Action and Interactive Research: Beyond practice and theory*. Maastricht: Shaker Publishing.

Nielsen, M.V. (2016) 'Organising stakeholder participation for responsible research and innovation'. PhD thesis, Roskilde University.

Nielsen, R.K. (2014) *Global Mindset as Managerial Meta-Competence and Organizational Capability: Boundary-crossing leadership cooperation in the MNC: The case of "group mindset" in Solar A/S*. PhD thesis. Frederiksberg: Copenhagen Business School. Online. http://hdl.handle.net/10398/8974 (accessed 25 March 2017).

Nowotny, H., Scott, P. and Gibbons, M. (2001) *Re-Thinking Science: Knowledge and the public in an age of uncertainty*. Cambridge: Polity Press.

Nyden, P., Hossfeld, L. and Nyden, G. (2011) *Public Sociology: Research, action, and change*. Thousand Oaks, CA: SAGE Publications.

Owen, R., Macnaghten, P. and Stilgoe, J. (2012) 'Responsible research and innovation: From science in society to science for society, with society'. *Science and Public Policy*, 39 (6), 751–60.

Pettigrew, A.M. (2005) 'The character and significance of management research on the public services'. *Academy of Management Journal*, 48 (6), 973–7.

Scharpf, F.W. (1978) 'Interorganizational policy studies: Issues, concepts and perspectives'. In Hanf, K. and Scharpf, F.W. (eds) *Interorganizational Policy Making: Limits to coordination and central control*. London: SAGE Publications, 345–70.

Slaughter, S. and Leslie, L.L. (1997) *Academic Capitalism: Politics, policies, and the entrepreneurial university*. Baltimore: Johns Hopkins University Press.

Smoliner, C., Häberli, R. and Welti, M. (2001) 'Mainstreaming transdisciplinarity: A research-political campaign'. In Klein, J.T., Grossenbacher-Mansuy, W., Häberli, R., Bill, A., Scholz, R.W. and Welti, M. (eds) *Transdisciplinarity: Joint problem solving among science, technology, and society: An effective way for managing complexity*. Basel: Birkhäuser Verlag, 263–72.

Torfing, J., Peters, B.G., Pierre, J. and Sørensen, E. (2012) 'Power and politics in interactive governance'. In Torfing, J., Peters, B.G., Pierre, J. and Sørensen, E. *Interactive Governance: Advancing the paradigm*. Oxford: Oxford University Press, 48–70.

Van de Ven, A.H. (2007) *Engaged Scholarship: A guide for organizational and social research*. Oxford: Oxford University Press.

Vangen, S. and Huxham, C. (2012) 'The tangled web: Unraveling the principle of common goals in collaborations'. *Journal of Public Administration Research and Theory*, 22 (4), 731–60.

Vehviläinen, M. (2006) 'Situated agency in interactive research: Women's ICT expertise and regional development'. In Nielsen, K.A. and Svensson, L. (eds) *Action and Interactive Research: Beyond practice and theory*. Maastricht: Shaker Publishing, 317–31.

Ziman, J. (2000) *Real Science: What it is, and what it means*. Cambridge: Cambridge University Press.